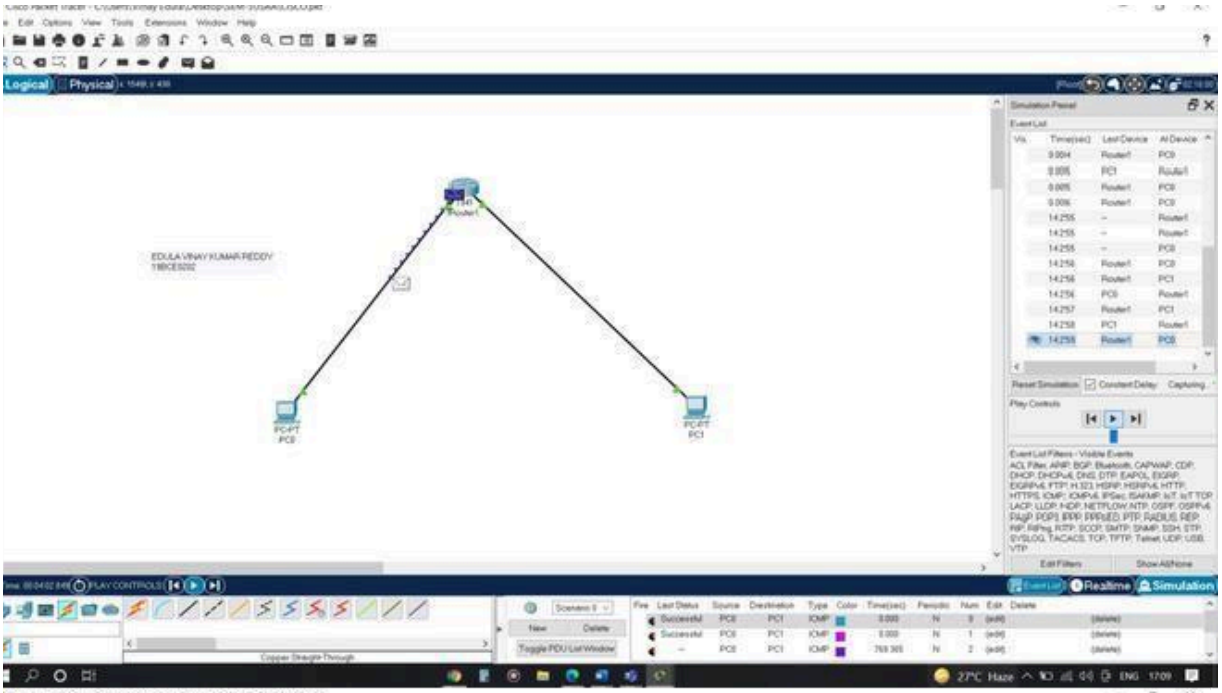
Practical-10
Internetworking with routers in CISCO PACKET TRACER simulator.

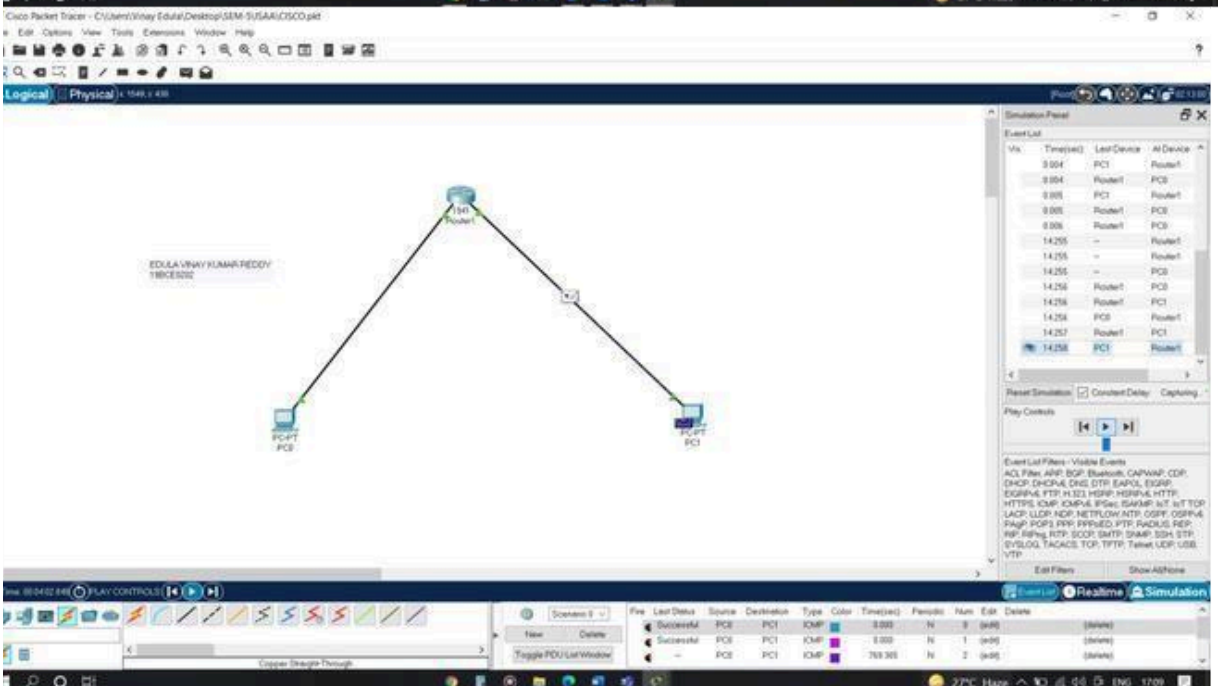
AIM:-a) Internetworking with routers in CISCO PACKET TRACER simulator.

Procedure :

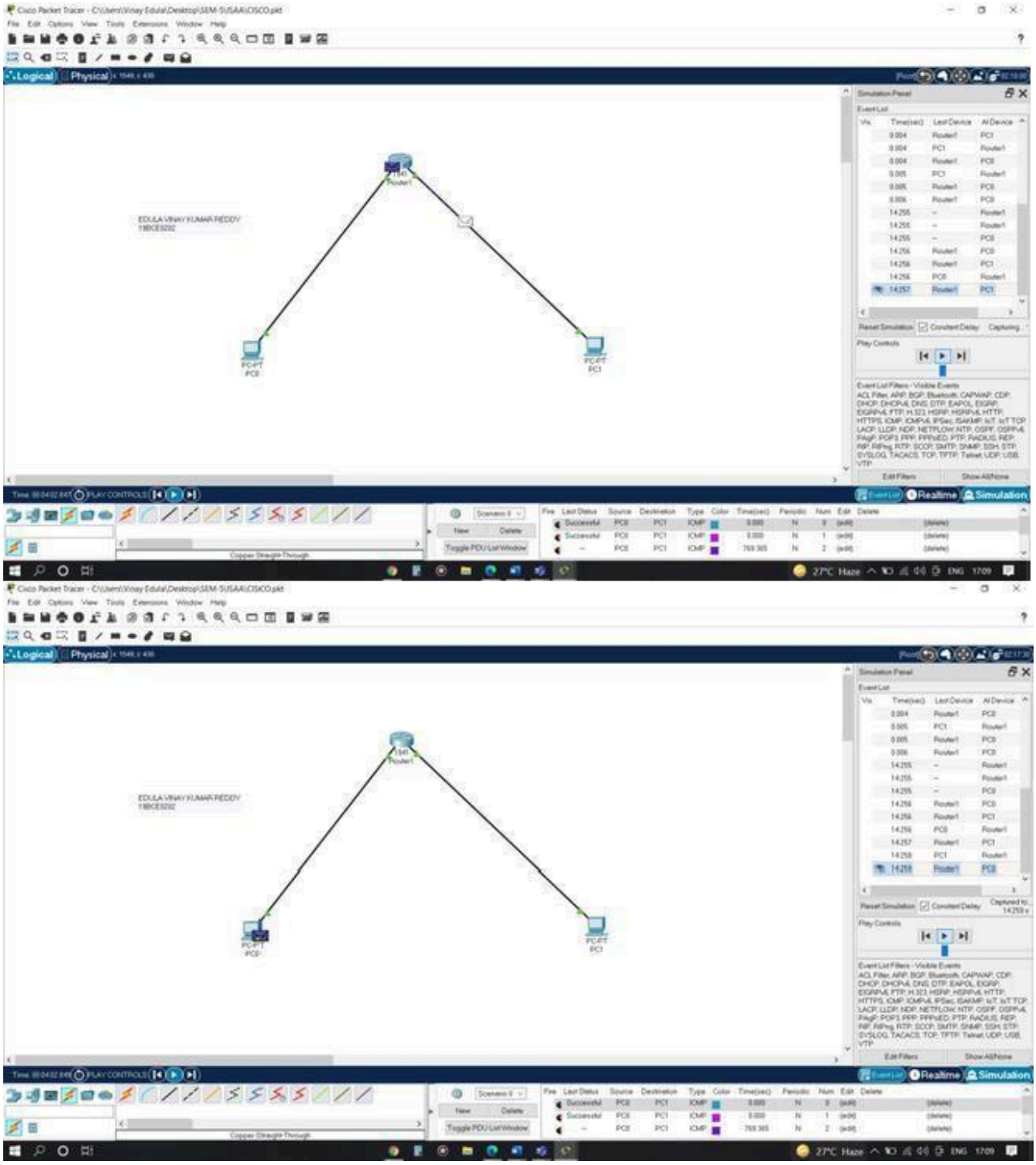
1. Create the Network Topology
2. Add 1 Router (Router1) and 2 PCs (PC0, PC1).
3. Connect PC0 → Router (Fa0/0) and PC1 → Router (Fa0/1) using copper straight-through cables.
4. Configure the Router
5. Open CLI → Press Enter
6. Router>enable
7. Router#configure terminal
8. Router(config)#interface FastEthernet0/0
9. Router(config-if)#ip address 192.168.10.1 255.255.255.0
10. Router(config-if)#no shutdown
11. Router(config)#interface FastEthernet0/1
12. Router(config-if)#ip address 192.168.20.1 255.255.255.0
13. Router(config-if)#no shutdown
14. Exit configuration mode.
15. Configure the PCs
16. PC0: IP = 192.168.10.2, Subnet Mask = 255.255.255.0, Gateway = 192.168.10.1
17. PC1: IP = 192.168.20.2, Subnet Mask = 255.255.255.0, Gateway = 192.168.20.1
18. Test Connectivity
19. Send a Simple PDU from PC0 → PC1.
20. Observe successful packet delivery (ACK reply from PC1).

Sending a PDU From PC0 to PC1:





Acknowledgment From PC1 to PC0:



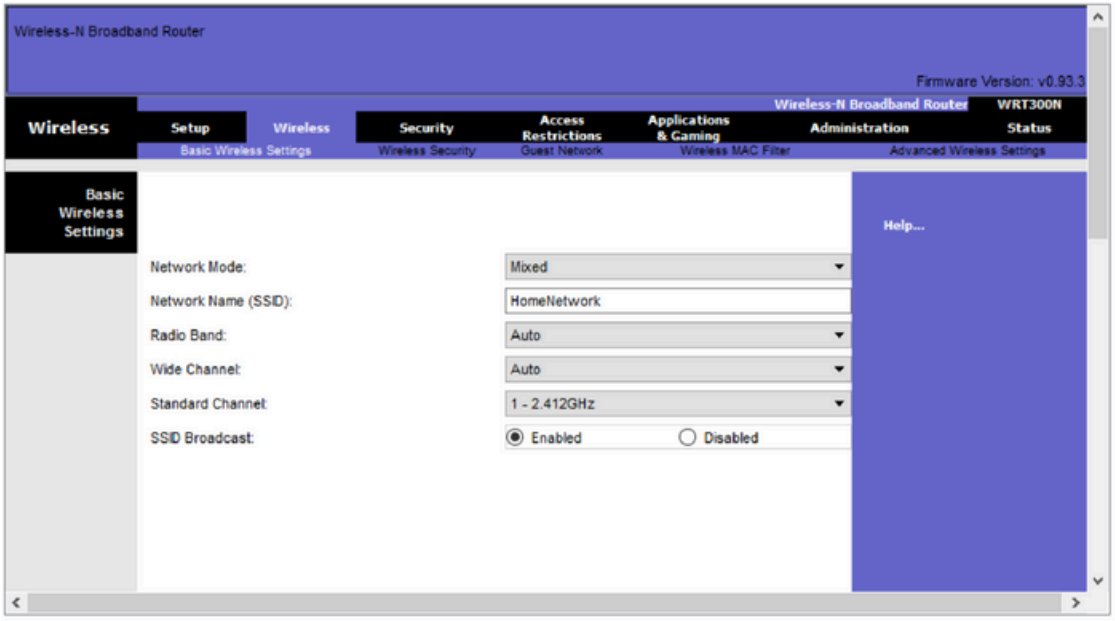
RESULT:

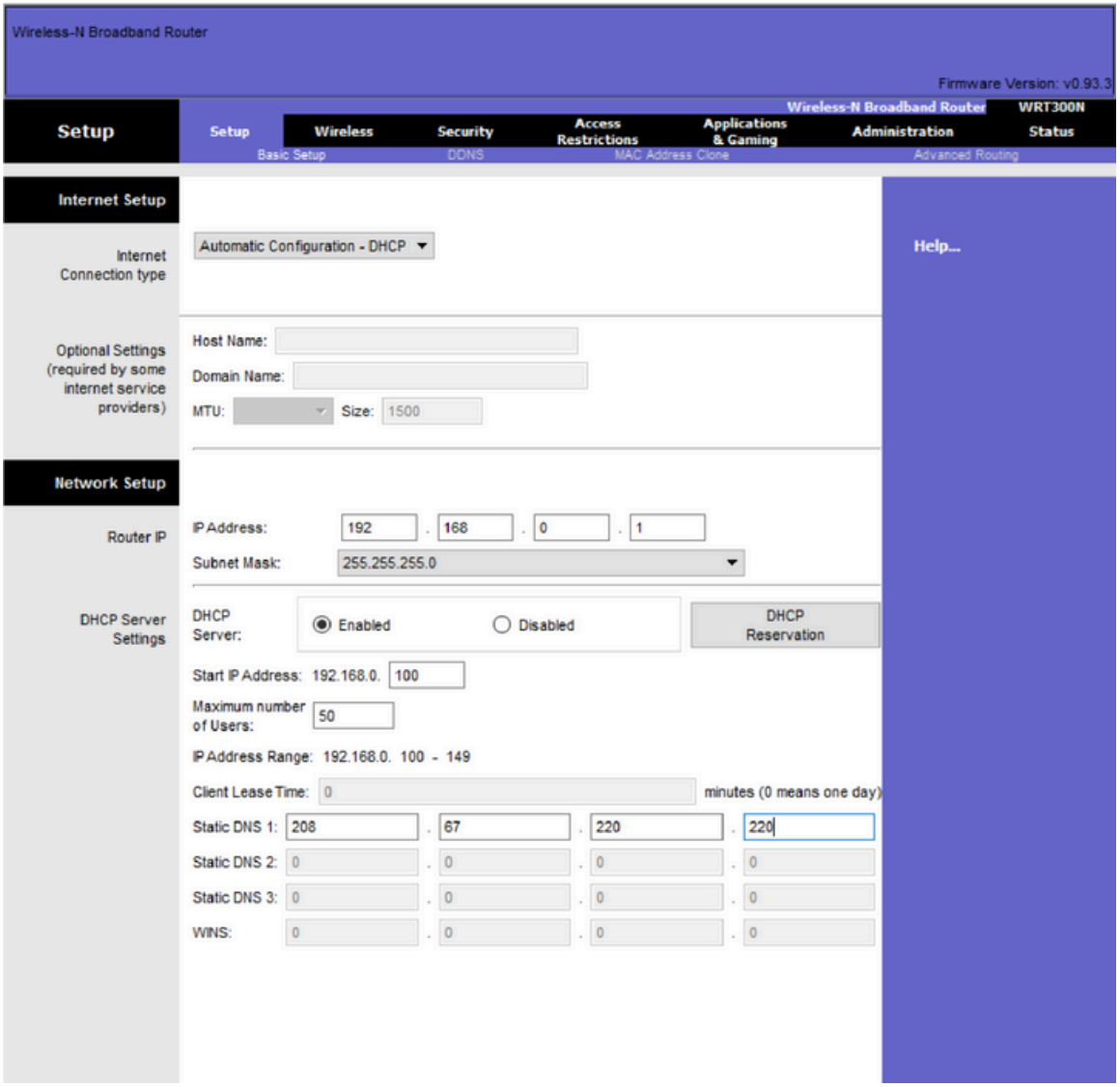
Therefore to design and configure of simple internetwork using a router is completed

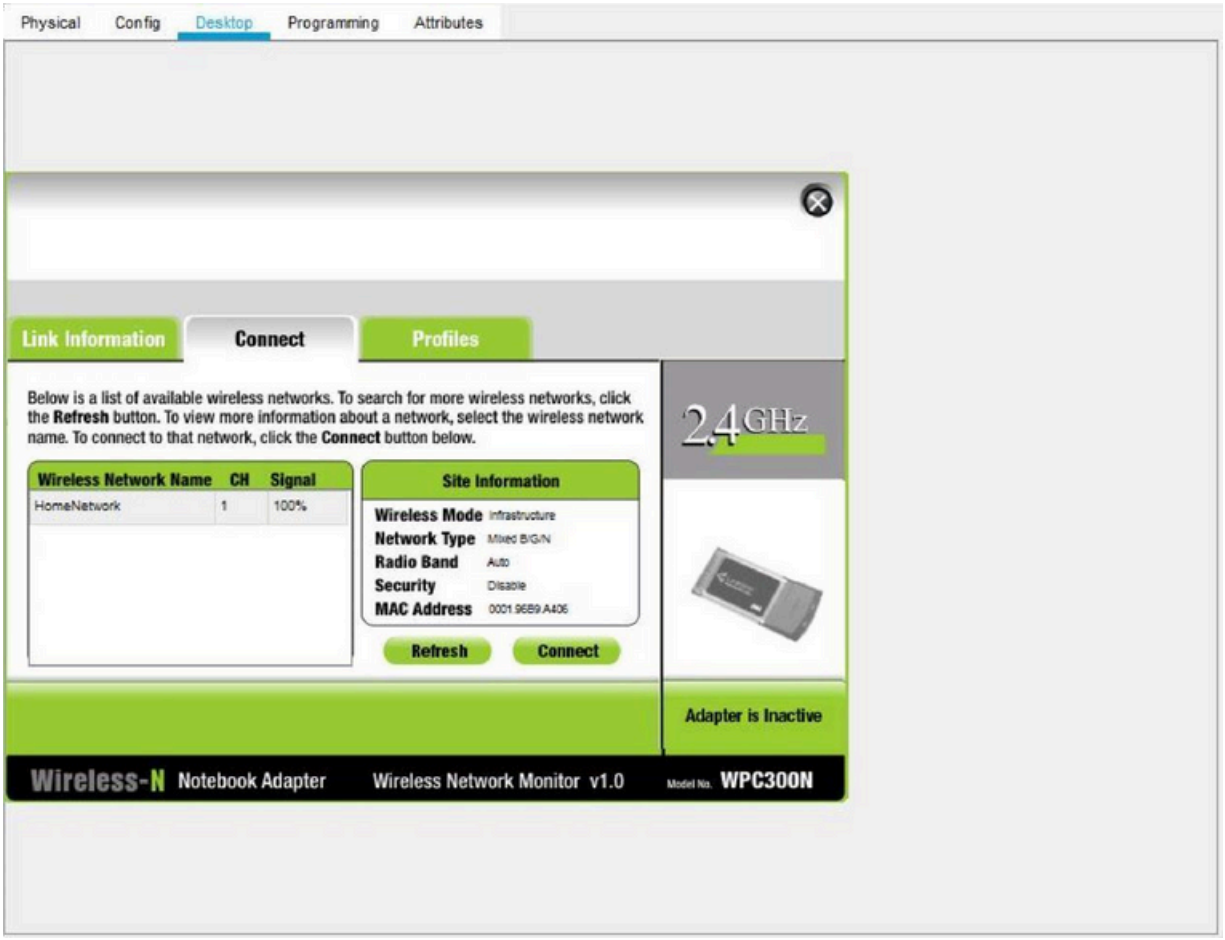
AIM:- b) Design and configure an internetworkusing wireless router, DHCP server and internet cloud.

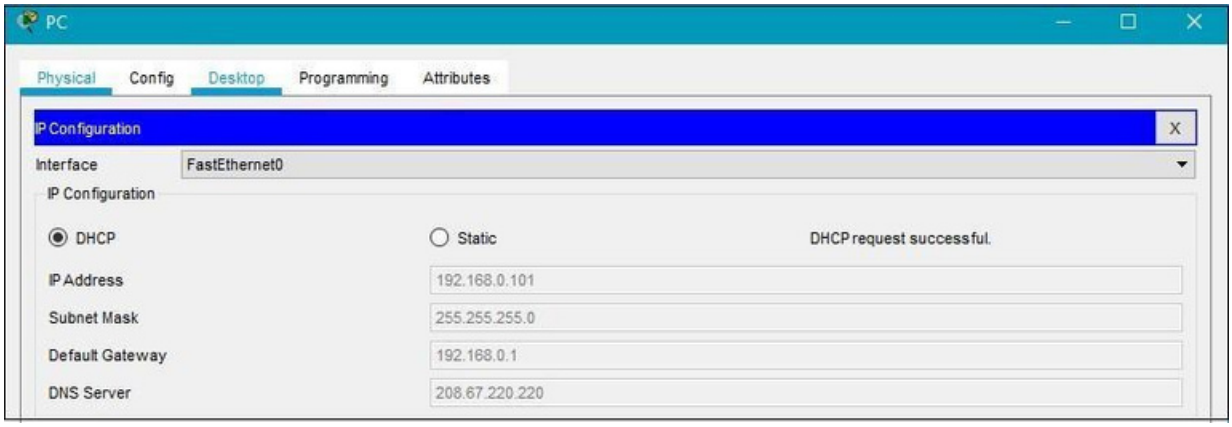
Procedure :

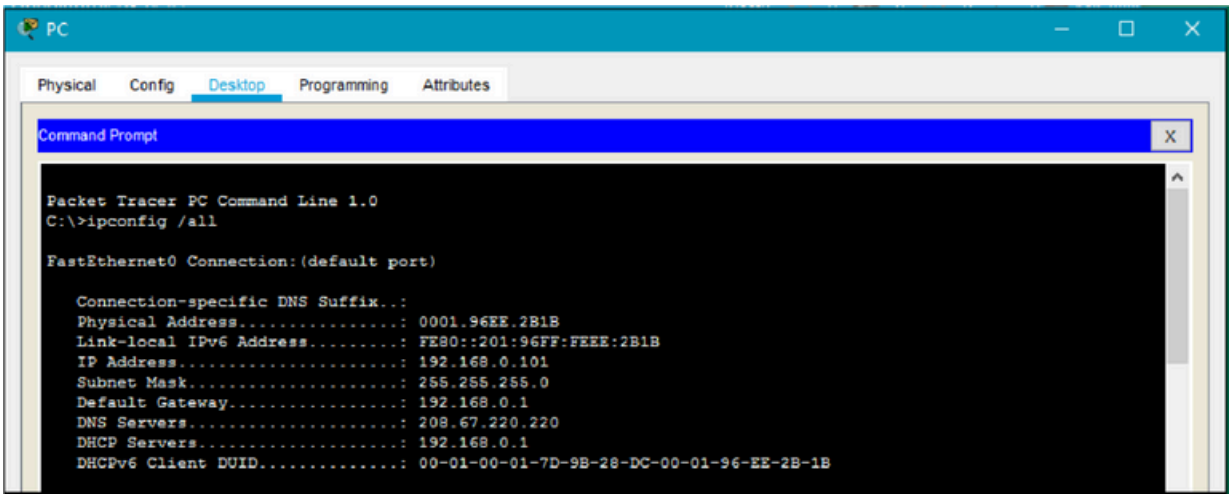
1. Build the Network Topology
2. Add PC, Laptop, Wireless Router, Cable Modem, Internet Cloud, and Cisco.com Server.
3. Connect devices using straight-through and coaxial cables as per topology.
4. Configure Wireless Router
5. Set SSID = HomeNetwork under Wireless tab.
6. Enable DHCP and set DNS = 208.67.220.220.
7. Configure Laptop
8. Replace Ethernet module with Wireless WPC300N.
9. Connect to HomeNetwork under PC Wireless settings.
10. Configure PC
11. Go to Desktop → IP Configuration → Select DHCP to get auto IP (192.168.0.x).
12. Configure Internet Cloud
13. Add required modules (PT-CLOUD-NM-1CX & PT-CLOUD-NM-1CFE).
14. Set From Port = Coaxial, To Port = Ethernet, and Provider = Cable.
15. Configure Cisco.com Server
16. Turn DHCP ON, set:
17. Pool: DHCPpool
18. Default Gateway & DNS: 208.67.220.220
19. IP Range: 208.67.220.1 – 208.67.220.50
20. Turn DNS ON → Map Cisco.com → 208.67.220.220
21. Set Static IP for Server: 208.67.220.220 / 255.255.255.0
22. Verify Connectivity
23. On PC → Command Prompt:
24. ipconfig /release
25. ipconfig /renew
26. ping Cisco.com
27. Successful ping replies confirm proper configuration.

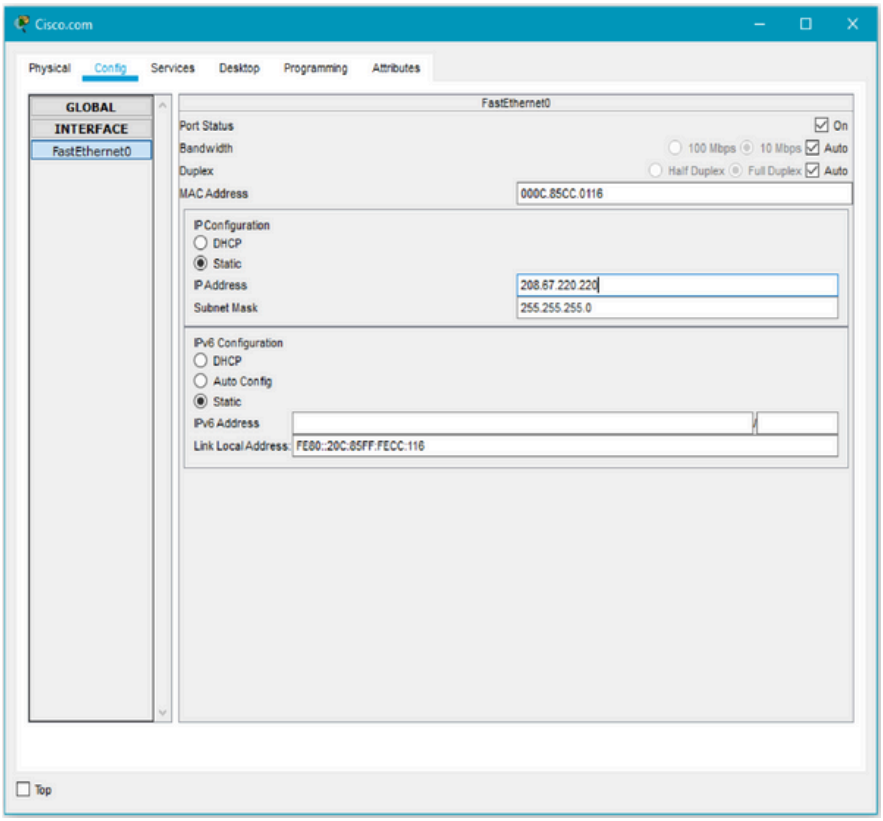

Wireless-N Broadband Router
Firmware Version: v0.93.3
Wireless-N Broadband Router WRT300N
Wireless
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Status
Basic Wireless Settings
Wireless Security
Guest Network
Wireless MAC Filter
Advanced Wireless Settings
Basic Wireless Settings
Help...
Network Mode: Mixed
Network Name (SSID): HomeNetwork
Radio Band: Auto
Wide Channel: Auto
Standard Channel: 1 - 2.412GHz
SSID Broadcast: Enabled Disabled

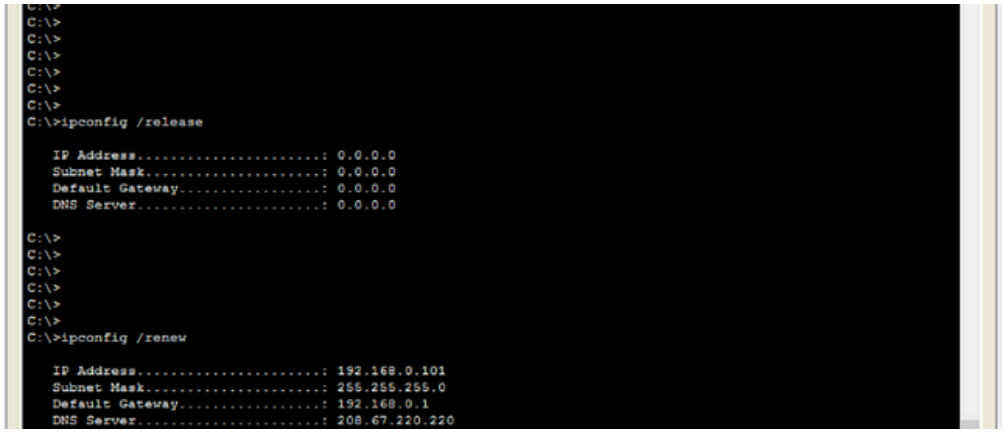

Wireless-N Broadband Router
Firmware Version: v0.93.3
Wireless-N Broadband Router WRT300N
Setup
Setup
Wireless
Security
Access Restrictions
Applications & Gaming
Administration
Status
Basic Setup
DDNS
MAC Address Clone
Advanced Routing
Internet Setup
Internet Connection type
Automatic Configuration - DHCP
Optional Settings (required by some internet service providers)
Host Name:
Domain Name:
MTU: Size: 1500
Network Setup
Router IP
IP Address: 192 . 168 . 0 . 1
Subnet Mask: 255.255.255.0
DHCP Server Settings
DHCP Server: Enabled Disabled
DHCP Reservation
Start IP Address: 192.168.0. 100
Maximum number of Users: 50
IP Address Range: 192.168.0. 100 - 149
Client Lease Time: 0 minutes (0 means one day)
Static DNS 1: 208 . 67 . 220 . 220
Static DNS 2: 0 . 0 . 0 . 0
Static DNS 3: 0 . 0 . 0 . 0
WINS: 0 . 0 . 0 . 0
Help...

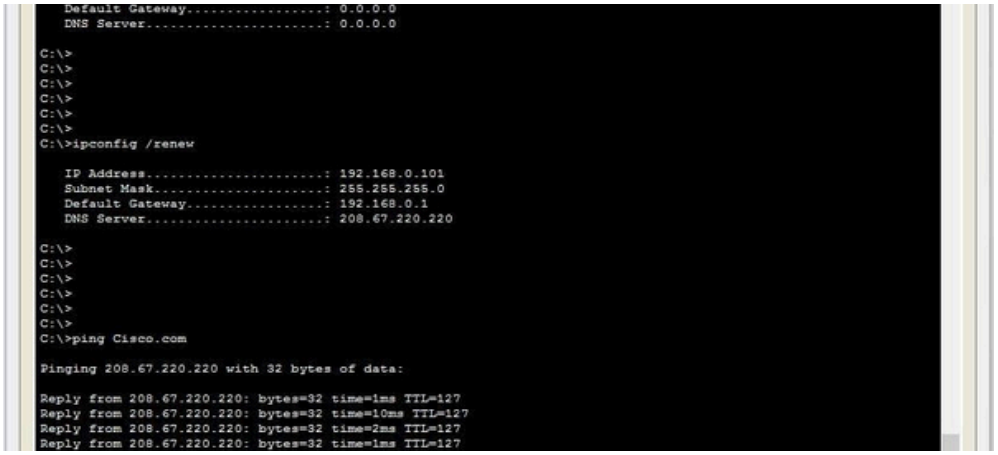

Physical
Config
Desktop
Programming
Attributes
Link Information
Connect
Profiles
Below is a list of available wireless networks. To search for more wireless networks, click the Refresh button. To view more information about a network, select the wireless network name. To connect to that network, click the Connect button below.
Wireless Network Name
CH
Signal
HomeNetwork
1
100%
Site Information
Wireless Mode
Infrastructure
Network Type
Mixed B/G/N
Radio Band
Auto
Security
Disable
MAC Address
0001.96E9.A406
Refresh
Connect
2.4GHz
Adapter is Inactive
Wireless-N Notebook Adapter
Wireless Network Monitor v1.0
Model No. WPC300N


PC
Physical
Config
Desktop
Programming
Attributes
IP Configuration
Interface
FastEthernet0
IP Configuration
DHCP
Static
DHCP request successful.
IP Address
192.168.0.101
Subnet Mask
255.255.255.0
Default Gateway
192.168.0.1
DNS Server
208.67.220.220


PC
Physical
Config
Desktop
Programming
Attributes
Command Prompt
Packet Tracer PC Command Line 1.0
C:\>ipconfig /all
FastEthernet0 Connection:(default port)
Connection-specific DNS Suffix..:
Physical Address.....: 0001.96EE.2B1B
Link-local IPv6 Address.....: FE80::201:96FF:FEEE:2B1B
IP Address.....: 192.168.0.101
Subnet Mask.....: 255.255.255.0
Default Gateway.....: 192.168.0.1
DNS Servers.....: 208.67.220.220
DHCP Servers.....: 192.168.0.1
DHCPv6 Client DUID.....: 00-01-00-01-7D-9B-28-DC-00-01-96-EE-2B-1B







RESULT :

Therefore the Internetworking implementation using routers in cisco packet tracer is completed